

**ABSTRACT OF THE DISCLOSURE**

**METHOD OF USING SACVD DEPOSITION AND  
CORRESPONDING DEPOSITION REACTOR**

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A method is provided for using SACVD deposition to deposit at least one layer of dielectric material inside a deposition reactor during the fabrication of at least one semiconductor integrated circuit. According to the method, a reaction chamber is provided for carrying out SACVD deposition, and a stream of a first reaction gas containing oxygen plasma is supplied into a gas feed conduit connected to the reaction chamber. Microwaves are applied inside the gas feed conduit in order to produce sufficient oxygen radicals from the oxygen plasma, the oxygen radicals being necessary to initiate SACVD deposition. A stream of a second reaction gas is supplied into the reaction chamber, with the second reaction gas being suitable to initiate SACVD deposition when reacting with oxygen radicals. The first reaction gas in which sufficient oxygen radicals have been produced from oxygen plasma is supplied into the reaction chamber to perform an SACVD deposition within the reaction chamber through reaction of oxygen radicals with the second reaction gas. Also provided is a deposition reactor for performing an SACVD deposition technique for fabricating a semiconductor integrated circuit.

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